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LACIE 00600

LARGE AREA CROP INVENTORY EXPERIMENT (LACIE)

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IMPLEMENTATION PLAN FOR
OPERATIONS COORDINATION CENTER



National Aeronautics and Space Administration
LYNDON B. JOHNSON SPACE CENTER

Houston, Texas

April 1975

LARGE AREA CROP INVENTORY EXPERIMENT (LACIE)
OPERATIONS COORDINATION CENTER
IMPLEMENTATION PLAN

Job Order 74-853

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1.0 INTRODUCTION

This document is the implementation plan for the requirements of the Large Area Crop Inventory Experiment (LACIE) Operations Coordination Center (OCC). The OCC is required within the Applications Evaluation System (AES) for the purpose of maintaining LACIE operational status, assessing problems, assigning actions, scheduling, and setting processing priorities. The purpose of the OCC is to assure an efficient and integrated approach to the daily operations effort. The coordination center is to be located within the Earth Observations Division (EOD) and will be under the direction of the Operations Manager, AES.

2.0 OBJECTIVES AND SCOPE

The OCC, as an element of the LACIE system, will provide status analysis and problem assessment within an operational environment and will assure that the operational objectives detailed in the LACIE Operations Plan (D-75-3-001) are met.

It is expected that the OCC will change in scope with the time phasing of LACIE. The changes will be due to the volume of data to be processed, the introduction of more automated status reporting methods, and the development of more efficient and well-defined operating techniques.

This implementation plan will present the organizational elements of the OCC as well as the OCC functions and the responsibilities of those persons who participate in the OCC activity as a direct result of their assignment within one of the other LACIE operating elements such as a LACIE subsystem or project staff assignment.

3.0 REQUIREMENTS AND IMPLEMENTATION APPROACH

This section describes the major functions of the OCC and the procedures, the organizational interfaces, and the required coordination necessary for their implementation.

The OCC will operate as a part of the AES within the Application Systems Verification Branch (ASVB) of EOD. It specifically lies within the responsibility of the Deputy for Operations and is under the direction of the Operations Manager. (The AES organization is described in the LACIE Operations Plan.)

The operations team utilizes the OCC for the purpose of determining status and making operational decisions in scheduling, priority, or troubleshooting assignments. This team consists of the Operations Manager and LACIE operations representatives from the EOD Data Manager, the LACIE subsystems, and the analysis teams. These operations team members individually make status inputs to the OCC as well as attend daily operations meetings in the OCC. The OCC is operated by the Operations Manager and his staff, who are charged with overall status maintenance, analysis of status information, present or potential problem identification, periodic production reports, and direction and coordination of LACIE operations activities.

3.1 DAILY REPORTS REQUIRED BY THE OCC

The Operations Coordinator and his staff will prepare the system status displays daily using inputs from various

sources. The data expected and the sources are described in the following sections.

3.1.1 Equipment Status

This is a report supplied to the OCC which reflects the status, "up/down," of each hardware unit utilized by LACIE. The Facilities Support Office (FSO) in Building 17 and the LACIE Operations Supervisor (LOS) will collect and supply this information to the OCC.

3.1.2 Discrepancy and Problem Report Status

This report is compiled from the open discrepancy reports (DR's) against the LACIE system and from problems identified in the daily operations. It provides pertinent information about each problem such as: DR number (if available), action taken, description of problem, estimated resolution date, and comments. This DR will be maintained and provided by the OCC as required.

3.1.3 Processing Status Reports

There are several reports required by the OCC which will be provided through the various LACIE subsystem operations representatives. These are noted below.

3.1.3.1 Data acquisition and preprocessing.- This report is provided by the Data Acquisition, Preprocessing, and Transmission Subsystem (DAPTS) and consists of information on the Goddard Space Flight Center (GSFC) status. It consists of the number of sample segments acquired, the number

processed, the number in process, and the number rejected. These numbers are to be daily figures and not cumulative "to date" figures.

3.1.3.2 JSC data receipt report.- This report required of LOS is an accounting of the sample segments received daily at JSC, logged into the system, and sent to the IBM 360-75 to be processed.

3.1.3.3 Composition and indexing.- The LOS is required to provide this report which gives the status of sample segments processed through the composition and indexing (C&I) software. This report is in terms of the number of sample segments received, processed, in process, sent to rework, and rejected by the C&I program.

3.1.3.4 Production film converter processing.- The status of image generation by the production film converter (PFC) is required in terms of the number of sample segments received, completed, in process, sent to rework, and rejected. This report is to be supplied by the LOS.

3.1.3.5 Photoprocessing status.- The Photographic Technology Laboratory (PTL) report requirement is to be accomplished in terms of rolls of film by product type. It will report the number of rolls received, completed, in process, sent to rework, and rejected for each product. The report will be provided by LOS to the OCC.

3.1.3.6 Analyst interpreter status.- The Analyst Interpreters (AI's) will be required to report their status through the Classification and Mensuration Subsystem (CAMS).

This status will be for sample segments received, completed, in process, sent to rework, and rejected. This report includes only the process of selecting training fields and transmitting this information for fields data base update when complete.

3.1.3.7 Field data base update status.- The AI will report the status on the fields data base updates by sample segment. This report will contain the number of sample segments for which training fields have been received, completed, are in process, sent to rework, or are rejected.

3.1.3.8 Data processing analysis status.- The CAMS will be required to report the status of the data processing analysis by sample segments received, completed [to Crop Assessment Subsystem (CAS)], in process, sent to rework, and rejected.

3.1.3.9 CAS aggregation status.- The CAS will be required to report the aggregation status. This report will contain the number of sample segments received, number of sample segments aggregated, and the expected reporting date to the U.S. Department of Agriculture (USDA).

3.1.3.10 Yield Estimation Status.- When the Yield Estimation Subsystem (YES) becomes operational, the OCC will define the inputs for the purpose of status and tracking.

3.1.3.11 LACIE operations schedule.- A list of tasks, activities, and milestones has been established for LACIE operations schedule phase I. This schedule will be updated each week by the OCC coordinator and published accordingly.

3.2 OCC OVERALL STATUS REPORTING

The OCC will analyze the reports input to it from the various areas and compile the following information for display in the OCC.

3.2.1 Processing System Status

This display will be updated daily and will contain aggregate information from the above reports. For each of the areas from which inputs are anticipated, the display will indicate the number of sample segments processed for the current day, "to date," in process for the current day, sent to rework, in rework, and rejected to date.

3.2.2 Summary Segment Processing Status

This chart will give an overall indication of the total sample segments received at JSC for the current day, completed as of the current day, in rework, and in process for that day.

3.2.3 Cumulative Segment Processing Plot

This plot will be displayed in the OCC and will show on a weekly basis the sample segments received, completed, and in process. Also, this plot will indicate the system capability as it is envisioned for any given time.

3.3 OCC ACTIVITIES

The OCC will contain the information necessary to make the decisions involving priority of processing, breakdown in

data flow, and scheduling. For this information to be useful, the OCC personnel must perform several analysis functions related to the system status.

One of the primary analysis functions that the OCC will perform is to balance the various reports and prepare a discrepancy list. This involves the assessment of each report, in terms of its input and output, and comparison with the other reports to assure compatibility. In cases where compatibility does not exist, the OCC personnel must determine the nature of the discrepancy and initiate a report which will be used by the operations team in making action assignments.

A second analysis function to be performed by OCC personnel is assisting the operations team in making priority and scheduling decisions. This function is one of backlog analysis. The OCC personnel will not only look at gross backlog numbers, but will also determine if specific backlogged data will impact the 14-day completion criterion.

The OCC personnel will analyze, evaluate, and report progress or problems in each LACIE subsystem. These reports will be utilized to assess system performance and to serve as guidelines for system improvement.

3.3.1 Data Throughput Evaluation

A data throughput evaluation will be maintained for each of the areas which provide input to the OCC. This information will be displayed in a timeline format.

3.3.1.1 Data throughput rate evaluation.- Each week, the OCC will aggregate the number of sample segments received, completed, and rejected for that week; add them to all previous weeks' aggregations; and compute a current average rate of each per week. The results will be plotted and displayed for evaluating system improvements, as well as for indicating current system capability and for determining how well LACIE operations are meeting the data processing schedule. This evaluation will be maintained for each of the OCC input reports and will serve as an indicator of overloaded and underloaded areas.

3.3.1.2 Workload projection.- The OCC will maintain a continually updated estimation of projected workload. This will be compared with current capabilities and will serve as an indicator of potential problem areas. This information will also be provided to implementing areas for their use in planning and scheduling.

3.4 OCC/OPERATIONS TEAM INTERFACE

As previously stated, the OCC functions as a facility for providing the operations team with a place to conduct their daily meetings and with the information necessary for this team to administer effectively the LACIE operations activities. The OCC activity and the daily meeting are not intended to be problem-solving functions; however, they do serve the function of revealing problems and making the action assignments necessary to their solution. It is anticipated that the OCC personnel will have the necessary information prepared prior to each day's meeting and that the operations meeting will be a very short evaluation of

this information resulting in establishment of the daily schedule, assignment of priorities, and assignment of action for the working of specific problem areas. Once the operations meeting is over, those persons assigned actions will be assisted by OCC personnel, where necessary, in gathering information or researching files. OCC personnel, however, will not necessarily become involved in the technical aspects of problem solving.

The OCC will provide copies of reports or other information upon receipt of a request for operational information.

4.0 IMPLEMENTATION SCHEDULES

		1975													
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
MILESTONES 1 FACILITY DESIGN 2 INPUT REPORTS (Processing Status) 3 WALL STATUS DISPLAYS 4 IDENTIFY POINTS OF CONTACT 5 OUTPUT REPORTS 6 STANDARD OPERATING PROCEDURES 7 8 9 10 11 12 13 14 15 16 17 18 19 20	↑														
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5.0 TASK DESCRIPTIONS

The OCC will develop and implement the status displays and all input reports from each subsystem to satisfy the operational activities. When the implementation is completed, all of the functions in section 3.0 can be completed. The following tasks are required:

1. Facility design: Locate and obtain an area which will satisfy the operational needs of the OCC.
2. Input reports: Coordinate with each subsystem manager to assure that the reports contain the information to satisfy the operational activities.
3. Wall status displays: Summarize all input reports and display in an orderly fashion to show total operational status.
4. Points of contact: Identify working interfaces to exchange operational status.
5. Output reports: Use the daily operational status displays and input reports to report progress or problems. The contents of these reports should reflect total LACIE operation activities.
6. Standard operating procedures: By expanding the inputs to the LACIE Data Handling and Procedures Document, a full set of standard operating procedures will be written by May 1, 1975.

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6.0 RESOURCE REQUIREMENTS

6.1 HARDWARE/SOFTWARE

The OCC requires access to the status and tracking data base in a read-only mode via a terminal with hard copy capability located in Building 17, room 2028. This terminal is a tool for discharging the OCC responsibilities of operations monitoring, coordinating, scheduling, and reporting.

6.2 PERSONNEL

The following are the staffing requirements for the OCC operations support:

1. One shift, 5-day week (This is the current support of the OCC.)
 - (a) OCC coordinator (1)
 - (b) OCC operator (2)
2. Two shifts, 5-day week
 - (a) OCC coordinator (2)
 - (b) OCC operator (2)
3. Two shifts, 7 days, or three shifts, 5 days
 - (a) OCC coordinator (1)
 - (b) OCC operator (4)
4. Three shifts, 7 days
 - (a) OCC coordinator (1)
 - (b) OCC operator (5)

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7.0 GLOSSARY

AES	Applications Evaluation System
AI	Analyst interpreter
ASVB	Application Systems Verification Branch
C&I	Composition and indexing
CAMS	Classification and Mensuration Subsystem
CAS	Crop Assessment Subsystem
DAPTS	Data Acquisition, Preprocessing, and Transmission Subsystem
DR	Discrepancy report
EOD	Earth Observations Division
FSO	Facilities Support Office
GDSD	Ground Data Systems Division
GSFC	Goddard Space Flight Center
IBM	International Business Machines
JSC	Lyndon B. Johnson Space Center
LOS	LACIE operations supervisor
OCC	Operations Coordination Center
PFC	Production film converter
PTL	Photographic Technology Laboratory
USDA	U.S. Department of Agriculture
YES	Yield Estimation Subsystem

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